NEW MEXICO OIL CONSERVATION COMMISSION

RECEIVED
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O. C. C.
ARTESIA, OFFICE

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool **Atoka** Formation **Pennsylvanian** County **Eddy**

Initial **X** Annual _____ Special _____ Date of Test **September 12, 1961**

Company **Mallard Petroleum, Inc.** Lease **Mayer-Holt** Well No. **1**

Unit **L** Sec. **28** Twp. **18-S** Rge. **26-E** Purchaser **Undecided. Will advise later.**

Casing **4 1/2"** Wt. **11.6#** I.D. **4.000** Set at **9,284'** Perf. **9,057'** To **9,189'**

Tubing **2 3/8"** Wt. **4.7#** I.D. **1.995** Set at **9,115** Perf. _____ To _____

Gas Pay: From **9,057'** To **9,189'** L **9,115** xG **.641** -GL **5842** Bar.Press. **13.2**

Producing Thru: Casing _____ Tubing **X** Type Well **Single**

Date of Completion: **9-9-61** Packer **Set @ 9,040** Single-Bradenhead-G. G. or G.O. Dual Reservoir Temp. **159°**

OBSERVED DATA

Tested Through (~~Xxxxxxx~~) (Meter) Type Taps **Flange**

No.	Flow Data (~~Xxxxxx~~) (Line) Size	(~~Xxxxx~~) (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI	4"					2864				72
1.	4"	2.750	710	4.5	78	2500				2
2.	4"	2.750	712	10.0	76	2191				3
3.	4"	2.750	715	16.0	64	1822				2
4.	4"	2.750	720	22.0	67	1523				2
5.	4"	2.750	715	13.0	68	1999				24

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w p_f}$	Pressure psia	Flow Temp. Factor F_t	Gravity Factor F_g	Compress. Factor F_{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	53.05	57.04	723.2	0.9831	.9918	1.062	3134
2.	53.05	85.16	725.2	.9850	.9918	1.062	4686
3.	53.05	107.99	728.2	.9962	.9918	1.069	6050
4.	53.05	127.00	733.2	.9933	.9918	1.065	7068
5.	53.05	97.30	728.2	.9933	.9918	1.065	5415

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio **75,270** cf/bbl.
Gravity of Liquid Hydrocarbons **56** deg.
P_c **9.936** $(1-e^{-s})$ **.331**

Specific Gravity Separator Gas **.610**
Specific Gravity Flowing Fluid **.641**
P_c **2877.2** P_c^2 **8,278**

No.	P_w P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$\frac{(F_cQ)^2}{(1-e^{-s})}$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	2513.2	6317	31.12	968	320	6637	1641	2576	.895
2.	2204.2	4859	46.56	2168	718	5577	2701	2361	.821
3.	1835.2	3368	60.11	3613	1196	4564	3714	2136	.742
4.	1536.2	2360	70.23	4932	1632	3992	4286	1998	.694
5.	2012.2	4049	53.80	2894	957	5006	3272	2237	.777

Absolute Potential: **11,200** MCFPD; n **0.77622**
COMPANY **Mallard Petroleum, Inc.**
ADDRESS **304 Gulf Building, Midland, Texas**
AGENT and TITLE **R. W. Kaemer, Petroleum Engineer**
WITNESSED **Phillip Garrison**
COMPANY **Parkersburg Rig and Reel Company**

REMARKS

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w). MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater. psia

P_w = Static wellhead working pressure as determined at the end of flow period. (Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

F_{pv} = Supercompressability factor.

n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t.